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22850	7590	04/27/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			FERRIS, DERRICK W	
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ALEXANDRIA, VA 22314			PAPER NUMBER	
			2616	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/801,533

Applicant(s)

MEKKITTIKUL ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-55, 57-64 and 66-82 is/are rejected.
- 7) ☒ Claim(s) 56 and 65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. This Office action is in response to applicant's paper filed 3/21/2006. **Claims 26-82** as amended are still in consideration for this application.
2. The examiner **withdraws** the objections to the drawings and thanks applicant for making the necessary changes and in particular to figure 9.
3. The examiner **withdraws** the 112-first paragraph rejections to claims 26, 37 and 39. The examiner does **not withdraw** the 112-first paragraph rejection for claims 27, 40, 50, 29, 42, and 52. In particular, for claims 27, 40, and 50 the examiner fails to see the relationship between QoS taught on page 12, lines 8-20 and a classifier circuit at the bottom of page 16 with respect to the limitation of a classifier circuit that is configured to classify each flow according to a QoS attribute. The examiner notes that the same reasoning above applies to claims 29, 42, and 52. In particular, page 12, lines 8-20 makes no reference to until a predetermined condition is satisfied and specifically makes no reference to bandwidth as a predetermined condition. The same reasoning can also be made with respect to until said ring segment status changes a second time. As such, the rejection is maintained below. In particular, page 12, lines 8-20 contain no references to time. *The examiner recommends that applicant amend the claims to be more consistent with the specification at page 12, lines 8-20 if that is in fact what applicant is arguing.*
4. The examiner **withdraws** the 112-second paragraph rejection and thanks applicant for making the necessary corrections.
5. Examiner does **not withdraw** the anticipated rejection to *Fawaz* and corresponding obviousness rejections. Applicant's arguments filed 3/21/2006 have been fully considered but

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they are not persuasive. In particular, the newly added limitation is further addressed below in the rejection.

6. Examiner does **not withdraw** the anticipated rejection to *Bruckman* and corresponding obviousness rejections. Applicant's arguments filed 3/21/2006 have been fully considered but they are not persuasive. In particular, the newly added limitation is further addressed below in the rejection.

7. Examiner does **not withdraw** the anticipated rejection to *Cao* and corresponding obviousness rejections. Applicant's arguments filed 3/21/2006 have been fully considered but they are not persuasive. In particular, the newly added limitation is further addressed below in the rejection.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. **Claims 27, 40, 50, 29, 30-32, 42, 43-44 and 52, 53-55** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **Claim 27**, line 2 further recites that the classifier circuit is configured to classify *each packet* into a flow *according to* a priority *or a QoS attribute*. The italicized portion of the above claim is not supported in applicant's specification. In particular, the description with respect to the classifier circuit does not

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explicitly teach how the packets are classified, see applicant's specification at bottom of page 16.

Applicant's specification at page 12, first full paragraph makes reference to handling packets based on the type of traffic (i.e., mission critical applications versus best-effort applications) but does not further teach a classifier circuit that classifies each packet according to a QoS attribute.

Furthermore, applicant's specification at page 16, lines 16-17 state that *each flow* is classified and not each packet for each flow. As to **claims 40 and 50**, see similar rejection to claim 27.

**Claim 29**, line 6 further recites queuing a flow destined to said first ring and having a second priority *until a predetermined condition is satisfied* and then redirecting said flow having a second priority to said second ring, and queuing a flow destined to said first ring and having a third priority *until said ring segment status message changes a second time* and then allowing said flow having a third priority to flow to said first ring. The italicized portion of the above claim is not supported in applicant's specification. In particular, the description with respect to the controllable switch does not further teach a predetermined condition, see e.g., applicant's specification at page 17. Furthermore, with respect to priority, applicant does not teach a predetermined condition, see e.g., applicant's specification at page 12. In particular, applicant's specification does not teach queuing packets until a second status message changes a second time. In particular, page 17, second full paragraph teaches a flow restoration scheme which may or may not be based on priority. The above restoration scheme further teaches reverting back to the original ring when the failure is corrected. Thus the above scheme teaches away from queuing a flow destined for said first ring until a status changes a second time. As to **claims 42 and 52**, see similar rejection to claim 29. **Claims 43-44 and 53-55** are rejected for depending on claims 42 and 52 respectively.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. **Claims 26-28, 38-40, 41, 48-50, 51, 56, 58-60 and 65** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No 6,714,517 B1 to *Fawaz et al.* (“*Fawaz*”).

As to **claim 26**, see e.g., figure 6 for a flow control device. An input configured to accept and relay packets from said source device is taught e.g., as input buffer 302. A classifier circuit connected to said input and configured to assign a flow identifier to each packet and to output a classified flow is taught as classifier 304. A first buffer connect to said classifier circuit and configured to buffer said classified flow, said first buffer having a rate controller which various an output of said first buffer on a per-flow basis is taught e.g., as FIFO buffers 306-310. In particular, please note that DRR teaches a rate controller. Also further note that each SLA is a flow. A first and second ring buffer

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connected to a respective one of said first and second rings is taught e.g., as output buffers 317 such that one output is in one direction and another out is in another direction. A controller switch connecting said output of said first buffer to said first ring buffers, second controllable switch controlled in response to a ring segment status so as to cause traffic, on a per-flow basis, to be queued in said first buffer and/or related to one of said of said first and second ring buffers is taught e.g., as scheduler 316. In particular, scheduler 316 operates based on congestion of the network where one embodiment relates to a bi-directional ringed network. As such, a reasonable but broad interpretation of controlled in response to a ring status message is taught in view of applicant's specification. The ring segment status message is when a message is not received/confirmed such that a node knows that a failure had occurred, see e.g., column 13, lines 39-49.

As to **claim 27**, the packets are classified based on type of application such that a reasonable but broad interpretation of priority is taught by the reference, see e.g., column 7, lines 54-55.

As to **claim 28**, *Fawaz* teaches at least congestion control, see e.g., column 11, lines 10-55. In particular, a QoS node sends a STOP message to at least the upstream node such that the STOP message is apart of the ring segment status.

As to **claim 38**, *Fawaz* teaches a network as shown e.g., in figure 4 which has nodes.

As to **claim 39**, see similar rejection to claim 26.

As to **claim 40**, see similar rejection to claim 27.

As to **claim 41**, see similar rejection to claim 28.

As to **claim 48**, see similar rejection to claim 38.

As to **claim 49**, see similar rejection to claim 26.

As to **claim 50**, see similar rejection to claim 27.

As to **claim 51**, see similar rejection to claim 28.

As to **claim 56**, see the output buffers with respect to the classifier as mentioned in the rejection for claim 26. See e.g., column 10, lines 10-26 with respect to discarding packets for a flow.

As to **claim 58**, see similar rejection to claim 26.

As to **claim 59**, see similar rejection to claim 27.

As to **claim 60**, see similar rejection to claim 28.

As to **claim 65**, see similar rejection to claim 56.

12. **Claims 67, 68, 70, 71, 73, 75, 76, 78, 79, and 81** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application 2002/0118700 A1 to *Bruckman et al.* ("*Bruckman*").

As to **claim 67**, *Bruckman* teaches a method of routing data flows. In particular, *Bruckman* teaches a dispatcher which determines which of the rings to allocate resources, see e.g., paragraph 0052 on page 4 and step 40 in e.g., figure 3. Specifically, a flow is given a reasonable but broad interpretation of a request from a requesting node, see e.g., paragraph 0006 on page 1. Thus *Bruckman* teaches controllably assigning the packets, on a per-flow basis and in response to a ring segment status. In particular, the ring segment status could be the availability of each ring, see e.g., paragraph 0009 on page 1.



Based on the above decision the packets for the flow are routed on either the first or second ring, see e.g., step 40 in figure 3. In particular, see e.g., paragraph 0050 with respect to figure 3 where ring segment status is a ring failure condition since inadequate bandwidth is based on network failure (i.e., ring segment failure).

As to **claim 68**, see e.g., step 38 and paragraph 0059 on page 4 where the dispatcher refuses the request. As such the packets are dropped, i.e., controllably removing the packets from one of the first and second rings on a per-flow basis.

As to **claim 70**, see similar rejection to claim 67.

As to **claim 71**, see similar rejection to claim 68.

As to **claim 73**, see similar combined rejections to claims 67 and 68.

As to **claim 75**, see similar rejection to claim 67.

As to **claim 76**, see similar rejection to claim 68.

As to **claim 78**, see similar rejection to claim 67.

As to **claim 79**, see similar rejection to claim 68.

As to **claim 81**, see similar combined rejections to claims 67 and 68.

13. **Claims 75-82** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,785,291 B1 to *Cao et al.* ("*Cao*").

As to **claim 75**, *Cao* teaches dynamic assignment of channels for packet flows, see e.g., column 2, lines 31-52. As such, the channel status can be the channel specification, e.g., step 52. Hence step 54 teaches controllable assigning the packets on a per-flow basis and in response to a channel status, to the first channel for an initial entry of said packets onto the first and second channels. In addition, where said channel status

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is a channel failure condition is taught as e.g., the error rate or change in bandwidth of a flow, see e.g., column 7, lines 54-62. Where said channel status is a channel failure condition is also taught e.g., as no receiving a packet at a predetermined time, see e.g., column 8, lines 16-25.

As to **claim 76**, see e.g., step 58 of figure 4, when the flow terminates the resources are de-allocated. Thus the packets are controllably removed from one of the first and second channels on a per-flow basis.

As to **claim 77**, see e.g., step 66 with respect to re-assigning packet flows to new channels.

As to **claim 78**, see similar rejection to claim 75.

As to **claim 79**, see similar rejection to claim 76.

As to **claim 80**, see similar rejection to claim 77.

As to **claim 81**, see similar combined rejections to claims 75 and 76.

As to **claim 82**, see similar rejection to claim 77.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. **Claims 37, 47, 57 and 66** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 6,714,517 B1 to *Fawaz et al.* ("Fawaz") in view of U.S. Patent No. 6,014,384 to *Weberhofer*.

As such to **claim 37**, *Fawaz* discloses limitation in the base claim.

*Fawaz* is silent or deficient to the further limitation wherein said packets are of a certain type (i.e., CBR, UBR, rt-VBR, and CP).

*Weberhofer* teaches the further recited limitation above at e.g., column 4, lines 14-52. In particular, the above types of traffic are well known in the art.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Fawaz* by clarifying different types of ATM traffic.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to separate cells of higher and lower priority. In particular, *Weberhofer* cures the above-cited deficiency by providing a motivation found at e.g., column 4, lines 47-51.

As to **claim 47**, see similar rejection to claim 37.

As to **claim 57**, see similar rejection to claim 37.

As to **claim 66**, see similar rejection to claim 37.

16. **Claims 67-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,785,291 B1 to *Cao et al.* ("*Cao*") in view of "Evolution of Optical Transport Technologies: From SONET/SDH to WDM" to *Cavendish*.

As such to **claim 67**, *Cao* teaches dynamic assignment of channels for packet flows, see e.g., column 2, lines 31-52. As such, the channel status can be the channel specification, e.g., step 52. Hence step 54 teaches controllable assigning the packets on a

per-flow basis and in response to a channel status, to the first channel for an initial entry of said packets onto the first and second channels.

*Cao* is silent or deficient to the further limitation of first and second rings. In particular, *Cao* teaches channels in view of applicant's specification at 18, lines 5-15 but does not explicitly teach a first and second ring.

*Cavendish* teaches the further recited limitation above at e.g., left-hand column on page 166 with respect to a BLSR network in view of figure 1 of *Cavendish*.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Cao* by clarifying that first and second channels are actually first and second rings on a BLSR network.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to transmit packets over a different medium and in particular an optical medium such as SONET. In particular, *Cao* cures the above-cited deficiency by providing the above motivation found at e.g., 6, lines 38-46.

As to **claim 68**, see similar reasoning above for claim 67 where *Cao* teaches e.g., step 58 of figure 4, when the flow terminates the resources are de-allocated. Thus the packets are controllably removed from one of the first and second channels on a per-flow basis.

As to **claim 69**, see similar reasoning above for claim 67 where *Cao* teaches e.g., step 66 with respect to re-assigning packet flows to new channels.

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As to **claim 70**, see similar rejection to claim 67.

As to **claim 71**, see similar rejection to claim 68.

As to **claim 72**, see similar rejection to claim 69.

As to **claim 73**, see similar combined rejections to claims 67 and 68.

As to **claim 74**, see similar rejection to claim 69.

***Allowable Subject Matter***

17. **Claims 29-36, 42-46, 52-55, and 61-64** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. **Claim 56 and 65** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123.


The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571)272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DWF

Derrick W. Ferris  
Examiner  
Art Unit 2616

 4/25/06  
**DERRICK FERRIS**  
**PATENT EXAMINER**